



Regulation XIII – New Source Review

January 14, 2020
South Coast AQMD
Call-in #1-866-705-2554
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Agenda



Previous Working Group Summary

Offsetting

Open Market

Internal Bank

NOx Offset Supply Post-RECLAIM

Summary of Working Group Meeting #1 (September 12, 2019)

Federal Requirements

No backsliding under
Section 110(l) of the
Clean Air Act (CAA)

2002 NSR Reform –
Federal NSR applicability
test for major sources

State Requirements

SB 288 – NSR changes
may not be less stringent
than existing provisions

Under specific
circumstances, SB 288
allows flexibility with NSR
rules changes

Guiding Principles

Ensure emission
increases do not interfere
with attainment of air
quality standards

Ensure new and modified
sources meet BACT

Allow for future economic
growth

Summary of Working Group Meeting #1 (September 12, 2019) – *Continued*

- Initial recommendations for modifications at major sources (post-RECLAIM) to address comments from U.S. EPA:

NSR Applicability

Use Actual Emissions-to-PTE to define an emission increase for NSR applicability

Offsetting

Amount of offsets required would be based on a two tier approach:

- PTE-to-PTE if certain conditions are met; or
- Actual-to-PTE for all other situations

- Applies to all pollutants – not RECLAIM specific
- Affects modifications at federal major sources
 - Federal major sources (e.g. NO_x potential to emit \geq 10 tons per year)
- No impact on minor sources
 - Modifications for post-NSR minor sources will continue to use PTE-to-PTE

Summary of Working Group Meeting #1 (September 12, 2019) – *Continued*

■ Stakeholder comments at the last Regulation XIII Working Group Meeting:

Retain Rule 2005 post-RECLAIM

- Requesting more information on why Rule 2005 cannot be retained

Leave Regulation XIII as is

- Possibility of no future SIP call

NSR applicability test flexibility

- More stringent requirements on minor sources (requiring BACT) allowed applicability test flexibility (use of PTE-to-PTE)

Use of baseline actuals-to-projected actuals

- Would not necessarily result in backsliding, since test may not be less stringent in some cases

Offsetting

Offsets

- Two sources of offsets under Regulation XIII:
 - Open market
 - Internal Bank
- Recent comments by U.S. EPA regarding applicability and calculation of offsets for major source modifications will increase the demand for offsets
- Previous RECLAIM WGM discussions focused on NOx offsets in the open market and internal bank
 - Analysis found insufficient amount and limited availability of NOx ERCs in the open market based on historical demand from RECLAIM facilities
- Presentation today will focus on NOx, SOx, VOC, and PM10 current and projected offsets in the open market and internal bank

Open Market

Open Market ERCs

- Past RECLAIM WGM (February 14, 2019) discussed if sufficient NOx ERCs would be available for facilities post-RECLAIM
- Analysis found insufficient amount and limited availability of NOx ERCs in the open market
 - Based on historical demand from RECLAIM facilities
- Supply of offsets for all other non-attainment criteria pollutants needs to be evaluated

Open Market

ERCs

- ☐ Held by individual owners (facility, company, or broker)
- ☐ Issued pursuant Rule 1309
- ☐ Discounted according to Rules 1306 and 1309

Open Market – ERC Generation

- Limited opportunities for ERC generation
 - Challenging to generate ERCs through over-control with BACT discounting
 - Most ERCs are generated from shutdowns (BACT discounted)
- Undesirable to incentivize facilities to shutdown equipment to generate ERCs

Generation	Over-control or shutdowns
Discount	Discounted to BACT at time of issuance
Issuance	Issued to individual owners for future use or sale; Value of ERC issued is in perpetuity (with the exception of short-term ERCs)

Approach for Evaluating ERCs in the Open Market

- Assessed current ERC balances for each pollutant (as of Nov 2019)
- Compared the net ERC year-to-year balance for the past 12 years (2008 – 2019)
 - Evaluated trend of ERC balance
 - Evaluated trend of ERC balance relative to supply of ERCs
- For NO_x ERC, accounted for estimated demand for RECLAIM facilities post-transition
- Evaluated general market activity
 - Assessed number and amount of ERC transactions
 - Distribution of ERC holding
 - Average recorded ERC cost

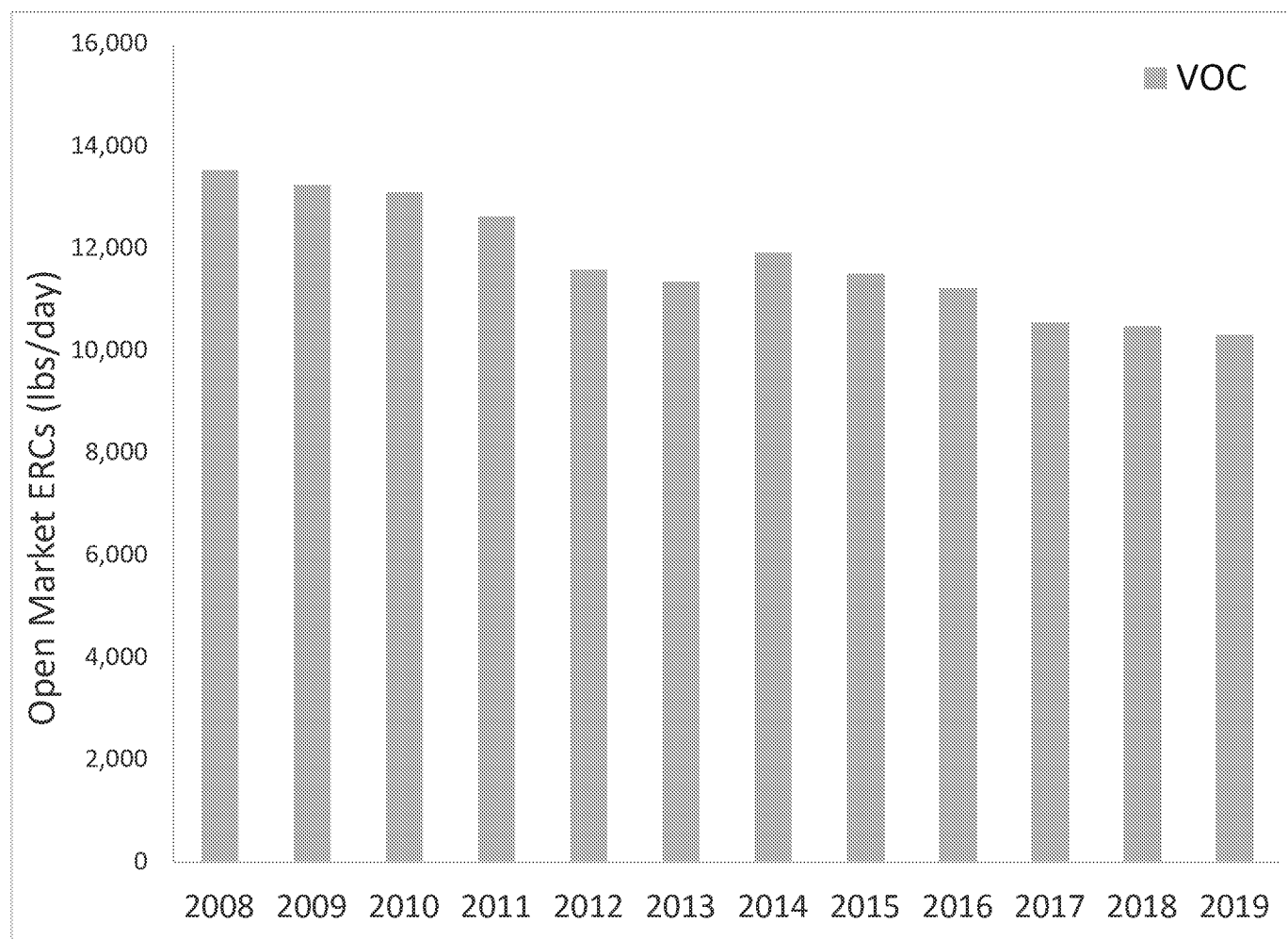
Current active ERCs available: <http://www.aqmd.gov/home/permits/emission-reduction-credits>

Historical lists of active ERCs available: <http://www.aqmd.gov/home/permits/emission-reduction-credits/historical-active-erc-and-sterc-lists>

Archive of Annual ERC Transaction Reports: <http://www.aqmd.gov/home/research/documents-reports/erc-transaction-report-archive>

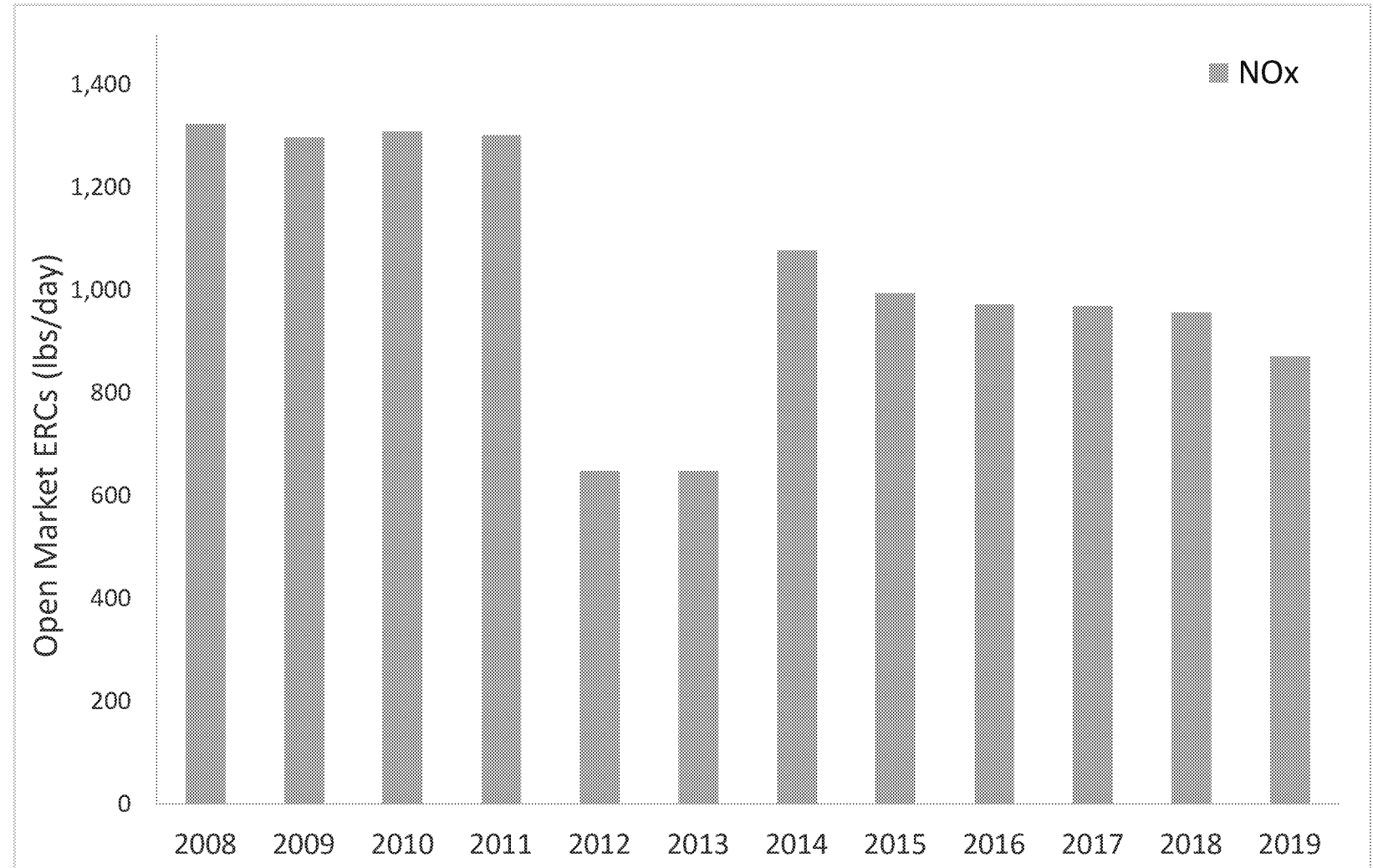
VOC ERC Net Balance (2008-2019)

- VOC ERC balance on a steady downward trend
- Net average = -292 pounds per day (24% decrease)
- Since remaining balance still relatively high, rate of ERC balance decline not a concern



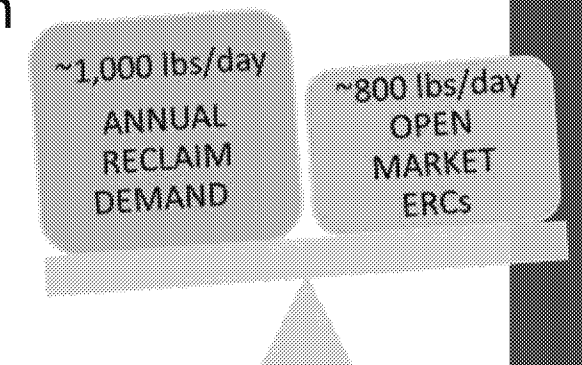
NOx ERC Net Balance for Non-RECLAIM (2008-2019)

- NOx ERC balance declining
- Net average = -41 pounds per day (34% decrease)
- Low remaining balance (~800 pounds per day)
- Decrease combined with low remaining balance is concerning
- RECLAIM transition will increase demand for ERCs (see next slide)



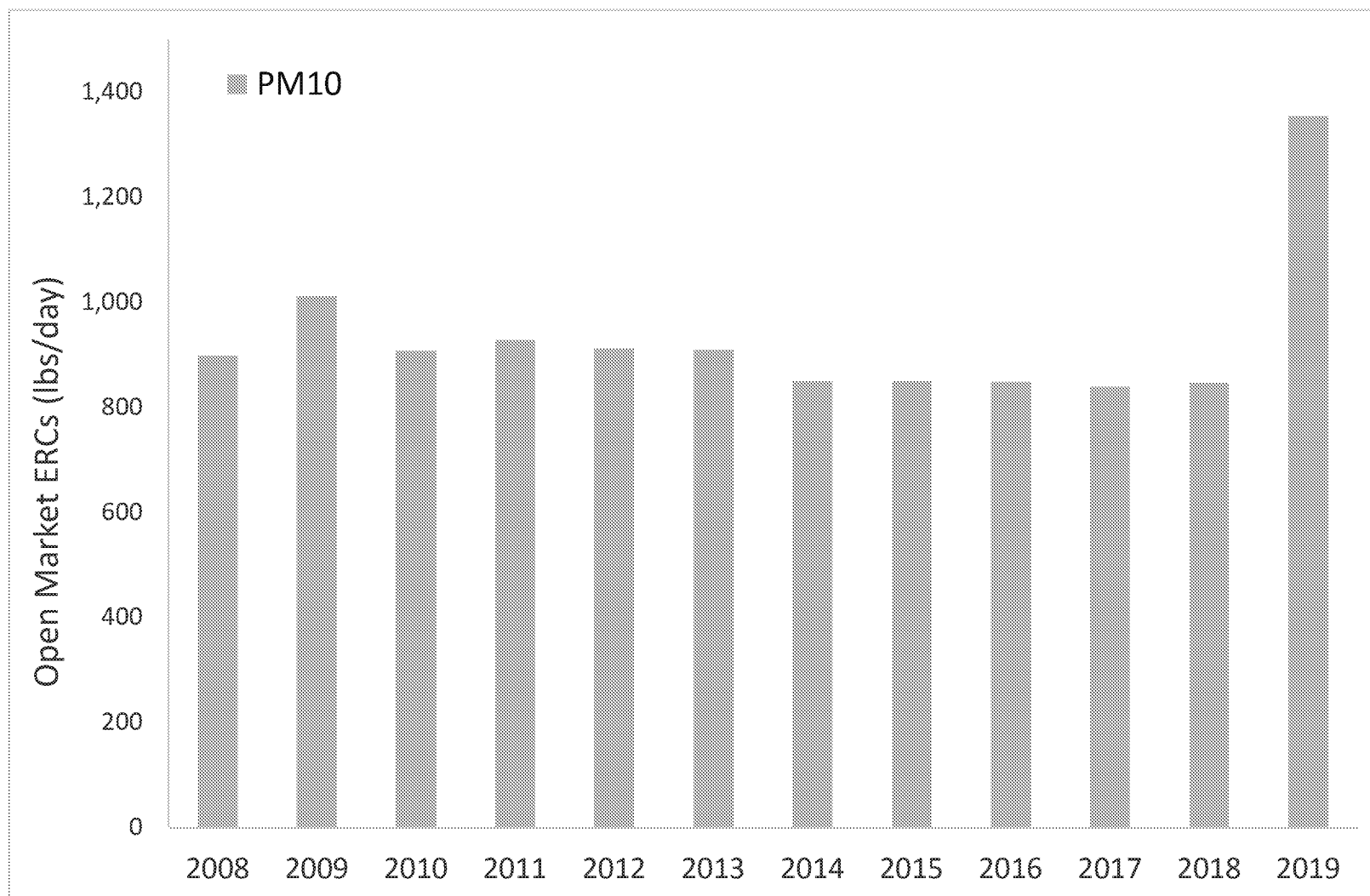
Potential RECLAIM NOx Offset Demand

- During RECLAIM working group meeting on February 14, 2019, discussed potential NOx offset demand from RECLAIM facilities
- Average RECLAIM demand: ~1,000 lbs/day (0.5 tpd) of NOx annually
- Average based on:
 - Emission increases for new and existing RECLAIM facilities with new or modified sources
 - 5-year period from 2011 – 2015
 - 1-to-1 ratio for RECLAIM NSR
- Potential demand after applying the 1.2-to-1.0 ratio per Regulation XIII:
 - ~1,200 lbs/day (0.6 tpd) of NOx annually
- Insufficient NOx ERCs in the open market
 - RECLAIM demand would deplete open market ERCs in < 1 year
 - Could be sooner – assumes all 800 lbs/day would be sold
 - Not accounting for additional offsets needed for major source modifications if NSR applicability and offset calculation is changed



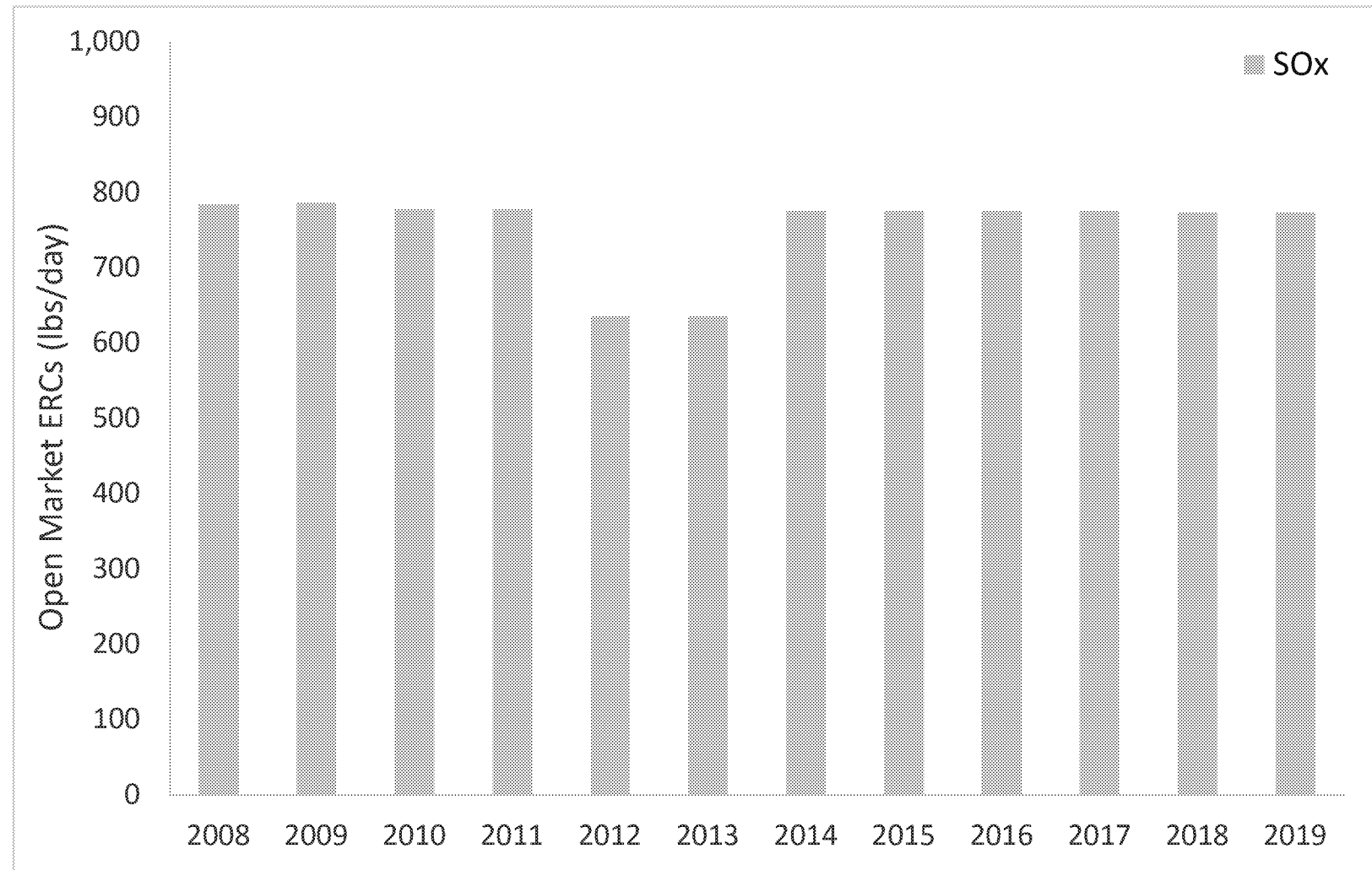
PM10 ERC Net Balance (2008-2019)

- PM10 ERC balance relatively stagnant
 - Except for significant one-time increase from recent facility shutdown
- Net average (excluding 2019) = -5 pounds per day (6% decrease)
- Net average = 41 pounds per day (51% increase)
- No concern since steady balance remains even with exclusion of 2019 increase



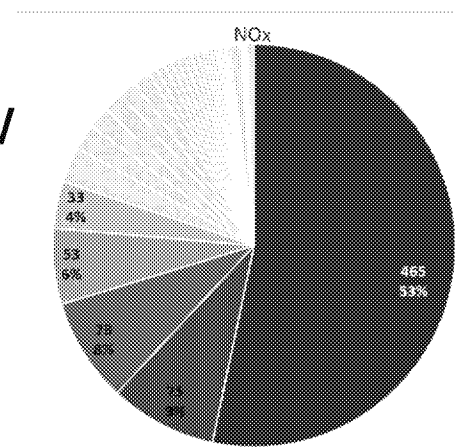
SOx ERC Net Balance for Non-RECLAIM (2008-2019)

- SOx ERC balance remains constant at ~700 pounds per day
- Net average = -1 pounds per day (1% decrease)
- No concern with non-RECLAIM demand due to steady balance
- Pending analysis for demand from SOx RECLAIM

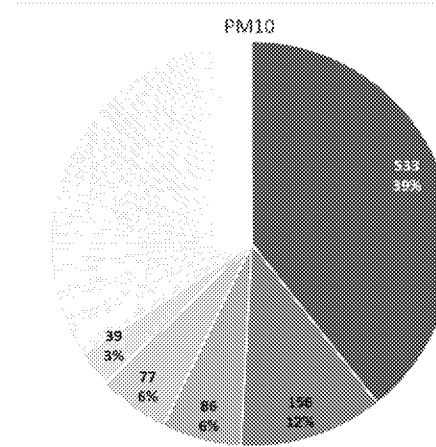


Limited Availability of ERCs in the Open Market

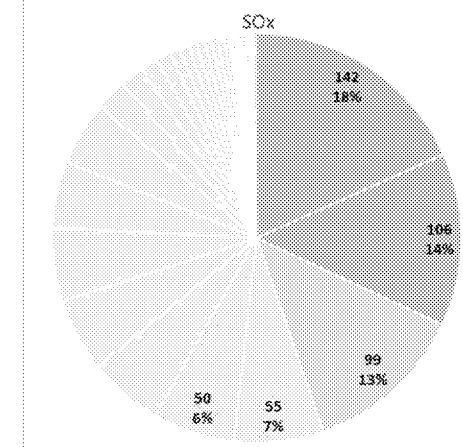
- Historical ERC transaction reports show limited sales of ERCs in the open market
- Facilities may want to hold on to ERCs for future business growth



5 out of 36 facilities hold
80% of NOx ERCs



5 out of 64 facilities hold
66% of PM₁₀ ERCs



5 out of 32 facilities hold
58% of SOx ERCs

Pollutant	Average Number of Transaction Annually	Average Quantity of ERCs Transferred Annually (lbs/day)	Average Percentage of ERCs Traded Annually	Average Cost (\$/ton per year)	2009 Peak Cost (\$/ton per year)
NOx	8	65	7.7%	\$127,000	\$399,000
PM10	22	115	12.4%	\$735,000	\$1,433,000
SOx	3	27	3.4%	\$376,000	\$452,000

Summary for Open Market

- Current balance of ERCs for VOC, PM10, and SOx do not appear to be concerning
 - SOx RECLAIM demand pending analysis
- Balance of NOx ERCs is a concern
 - Concern amplified with RECLAIM transition and potential change in offset calculation
- Market activity shows limited availability of current supply of ERCs
 - Few facilities hold the majority of ERCs
 - These facilities may hold their ERCs for own growth
- Limited trading makes it difficult for facilities to obtain ERCs

Internal Bank

South Coast AQMD Internal Bank

- Past RECLAIM WGM (May 16, 2019) discussed other potential sources of offsets post-RECLAIM
 - Offsets from the existing South Coast AQMD Internal Bank
 - Initial concepts for a new Large Source Bank
- Prior analysis only considered NOx offsets
- Supply of offsets for all other non-attainment criteria pollutants needs to be evaluated

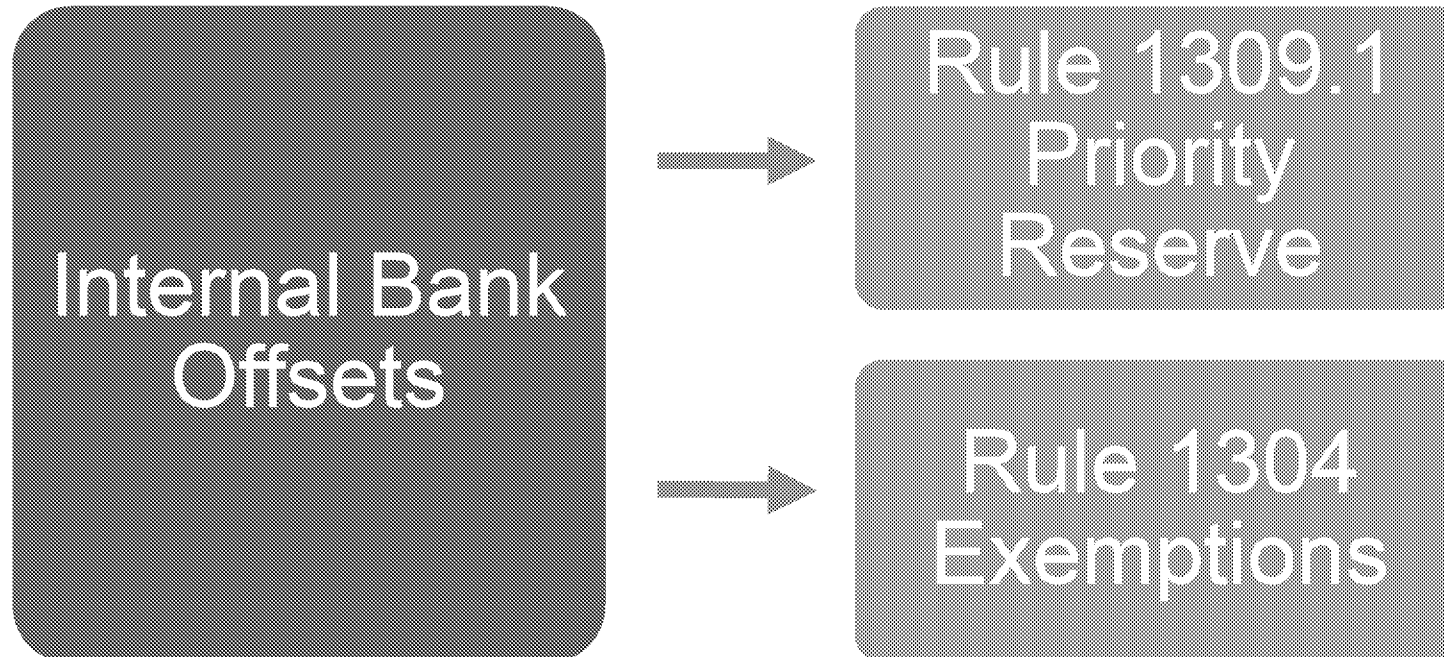
Internal Bank

Offsets

- ☐ Held by South Coast AQMD
- ☐ Issued pursuant to Rules 1304 and 1309.1
- ☐ Discounted according to Rule 1315

South Coast AQMD Internal Bank

- Internal bank offsets are used for eligible sources:
 - Priority Reserve (Rule 1309.1)
 - Exempt from offsetting (Rule 1304)



Rule 1309.1 (Priority Reserve)

- These sources are eligible to obtain offsets from the Priority Reserve¹:

Essential public services ²	<ul style="list-style-type: none">• Publicly owned or operated sewage treatment facilities• Prisons• Police facilities• Fire fighting facilities• Schools• Hospitals• Construction/operation of landfill gas control or processing facility• Water delivery operations• Public transit	Innovative technology	<ul style="list-style-type: none">• Equipment or a process that will result in a significantly lower emissions from the affected source than would have occurred with the use of Best Available Control Technology (BACT)
		Research operations	<ul style="list-style-type: none">• Experimental research operations, limited to two years, with the purpose to advance the state of knowledge or the state-of-the-art

¹RECLAIM facilities currently not eligible for Priority Reserve

²All sources at these facilities must operate at or below BARCT

Rule 1304 (Exemptions)

- Regulation XIII has an offsetting exemption for
 - Facilities with PTE less than 4 tons per year;
 - Facilities with PTE greater than 4 tons per year with certain categories listed under Rule 1304
- Offsets are taken out of the internal bank only for the federal major source exemptions
- BACT is still required for exempted sources

Offsetting exemptions under Reg XIII (not federal NSR)

- Electric utility steam boiler replacements
- Abrasive blasting equipment
- Emergency equipment
- Air pollution control strategies
- Portable equipment
- Portable internal combustion equipment
- Resource recovery / energy conservation projects

Offsetting exemptions under Reg XIII and potentially federal NSR

- Regulatory compliance (no increase in capacity)
- Regulatory compliance for essential public services (no offsets in Priority Reserve)

Self-offsetting exemptions

- Functionally identical replacements
- Concurrent facility modification
- Relocations

South Coast AQMD Internal Bank

- Offsets in the internal bank generated mostly from orphan shutdowns
 - Emission reductions from sources that shutdown but did not apply for emission reduction credits (ERCs)
- All offsets in the internal bank are discounted annually to BARCT
 - To satisfy federal **surplus at time of use** requirement

Generation	Primarily orphan shutdowns (amount deposited = 80% of PTE of the orphan shutdown)
Discount	Entire balance discounted annually to BARCT
Issuance	Provided to sources that are eligible for Priority Reserve (Rule 1309.1) or exempt (Rule 1304)

Comparison Between the Open Market and South Coast Internal Bank

	Open Market	Internal Bank
	ERCs	Internal Bank Offsets
Generation	Over-control or shutdowns	Primarily orphan shutdowns
Discount	Discounted to BACT at time of issuance	Entire balance discounted annually to BARCT
Issuance	Issued to individual owners for future use or sale	Provided to sources that are eligible for Priority Reserve (Rule 1309.1) or exempt (Rule 1304)
Pollutant	Balance (tons per day)	
VOC	5.1	107
NOx	0.4	23
PM10	0.7	16
SOx	0.4	4

Internal Bank Offset Projections

- Projections for internal offsets only consider federal requirements
- South Coast AQMD tracks, as debits, the offsets used for federal major sources
 - Internal bank offsets used to demonstrate that sufficient offsets were provided for major sources as required by Federal NSR
 - Accounting of debits and credits is formalized in Rule 1315

Credits

- Emission reduction credits from orphan shutdowns

Debits

- Offsets provided to federal major sources for eligible projects pursuant to Rule 1309.1 (Priority Reserve) and Rule 1304 (Offsetting exemptions)

BARCT Discount

- Entire balance for each specific pollutant is discounted annually to BARCT
- Discount is to ensure offsets meet federal criteria and are surplus at the time of use

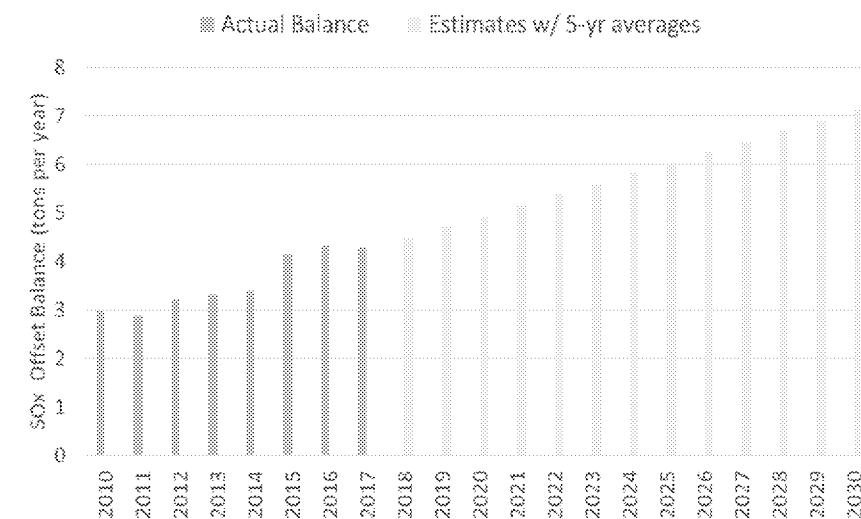
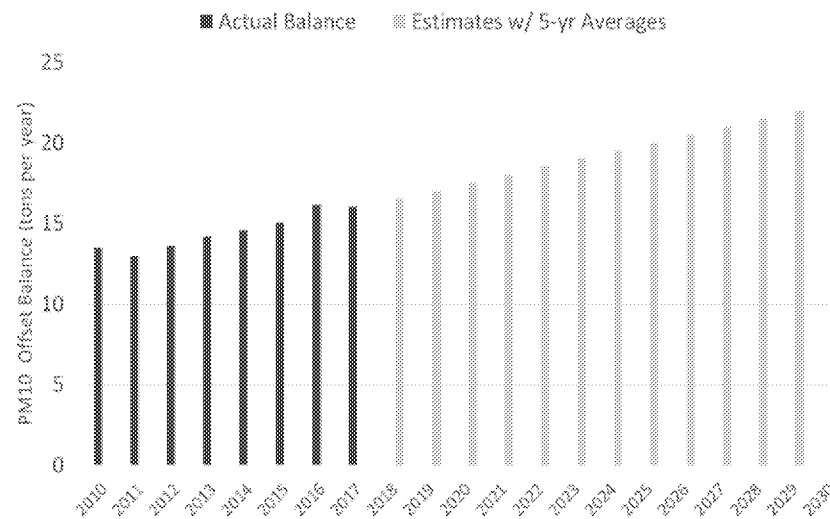
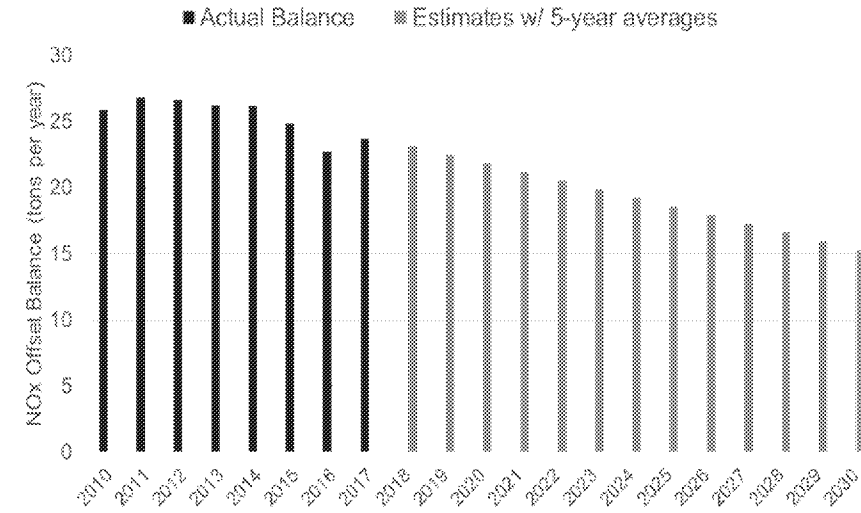
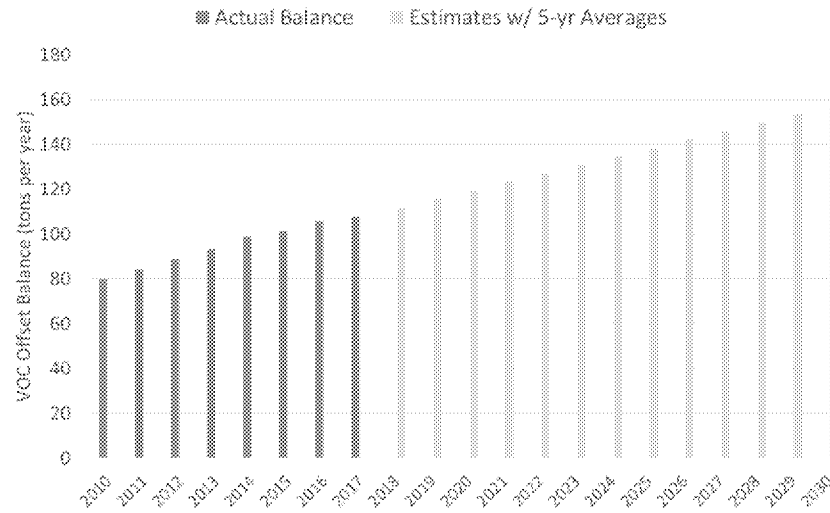
Internal Bank Offset Projections (*Continued*)

■ Internal offset projections based:

- Future draw for eligible major sources only (Rules 1304 and 1309.1)
- Average credits, debits, and BARCT discount over the past 5 years (2013 – 2017):

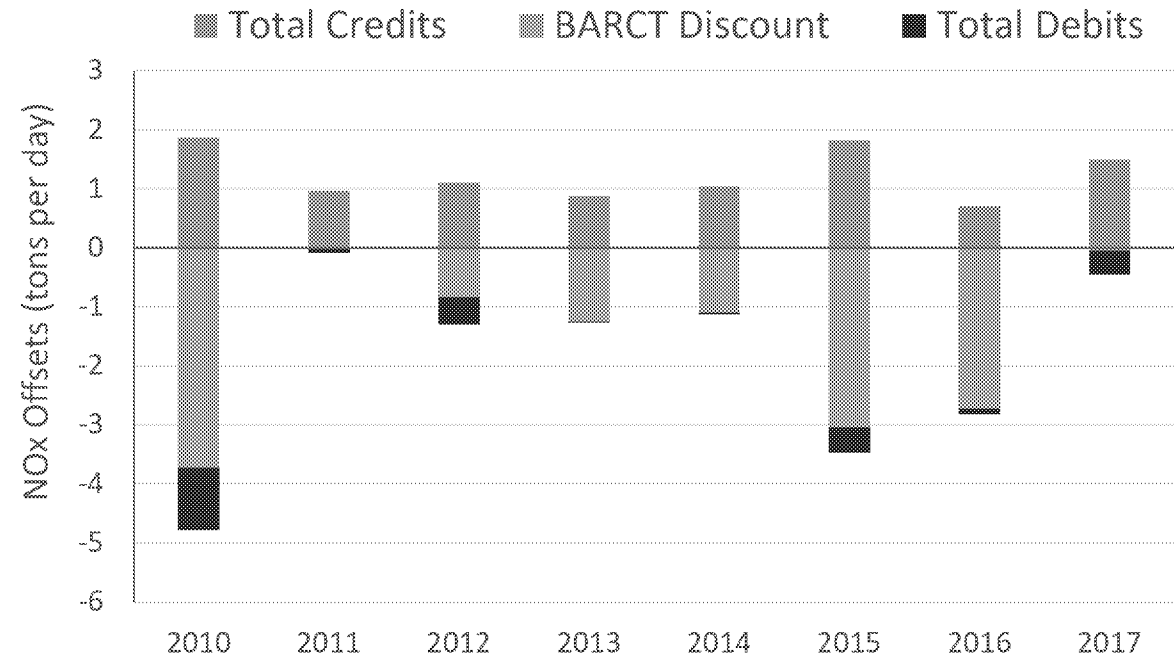
■ VOC, PM10, and SOx internal offsets projected to increase

■ NOx internal offsets declining



Internal Bank NOx Offset Supply and Demand

- Current supply of NOx internal offsets is ~ 23 tons per day (tpd)
- Average credits and debits from the Internal Bank over the past 5 years (2013 – 2017):
 - Credits: 1.18 tpd of NOx annually
 - Debits: -0.19 tpd of NOx annually
 - Annual average net (credit) of 0.99 tpd of NOx
- BARCT discount
 - Most recent 5-year average (2013 – 2017): -1.63 tpd of NOx annually



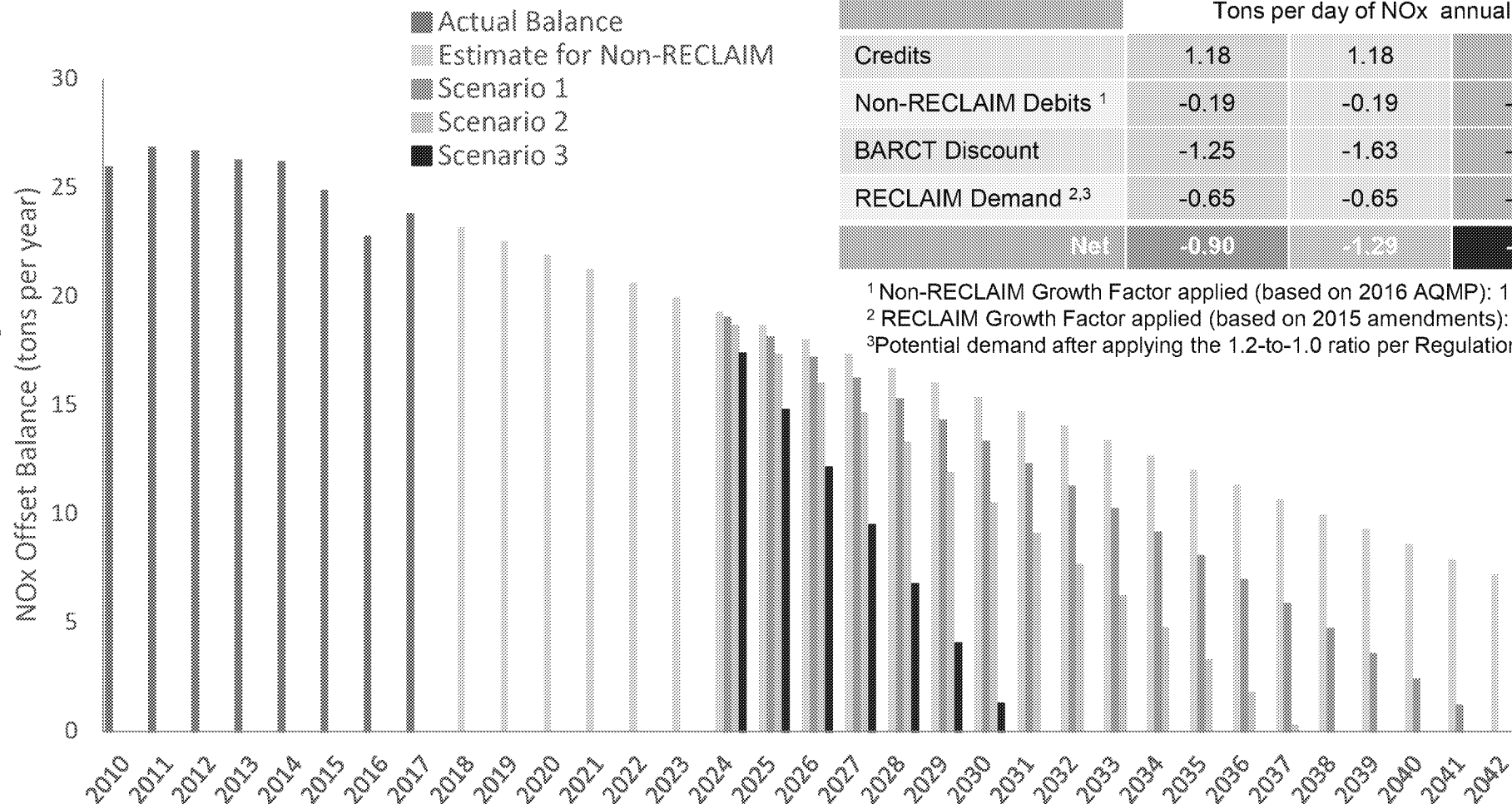
NOx Offset Supply Assumptions

- Evaluated different scenarios to estimate potential supply and demand of internal offsets post-RECLAIM (2024+)
- Non-RECLAIM credits, debits, and BARCT discount:
 - Highest 5-year average over 2010 – 2017
 - Lowest 5-year average over 2010 – 2017
 - Most recent 5-year average (2013 – 2017)
- RECLAIM Demand
 - Highest single year (2011 – 2015)
 - 5-year average (2011 – 2015)

	Scenario 1		Scenario 2		Scenario 3	
Credits	Highest 5-yr average	1.18	Most recent 5-yr average	1.18	Lowest 5-yr average	1.11
Non-RECLAIM Debits	Lowest 5-yr average	-0.19	Most recent 5-yr average	-0.19	Highest 5-yr average	-0.32
BARCT Discount	Lowest 5-yr average	-1.25	Most recent 5-yr average	-1.63	Highest 5-yr average	-1.79
RECLAIM Demand	5-yr average (2011 – 2015)	-0.65	5-yr average (2011 – 2015)	-0.65	Highest year	-1.52
Net		-0.90		-1.29		-2.52

NOx Offset Supply After RECLAIM Transition

- Offsets supply will further depreciate with RECLAIM demand
- Supply of offsets can potentially be depleted by 2030
- Depletion of offsets would be sooner if offsetting calculation changed to Actual-to-PTE
- Does not account for potential offsets that can be generated from RECLAIM facilities



Assumptions	Scenario 1	Scenario 2	Scenario 3
	Tons per day of NOx annually		
Credits	1.18	1.18	1.11
Non-RECLAIM Debits ¹	-0.19	-0.19	-0.32
BARCT Discount	-1.25	-1.63	-1.79
RECLAIM Demand ^{2,3}	-0.65	-0.65	-1.52
Net	-0.90	-1.29	-2.52

¹ Non-RECLAIM Growth Factor applied (based on 2016 AQMP): 1.01

² RECLAIM Growth Factor applied (based on 2015 amendments): 1.02

³ Potential demand after applying the 1.2-to-1.0 ratio per Regulation XIII

Summary

- Limited trading and low ERC supply (except for VOC) in the open market
- VOC, PM10, and SOx internal offsets are increasing
- Declining NOx internal offsets are concerning
 - With RECLAIM demand and potential change in offset calculation, NOx internal offsets could be depleted by 2030
 - Permit moratorium would result if offsets are depleted

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